CLAIMS:

1. A molecular sieve comprising single crystals or agglomerates, the crystals or agglomerates having an average largest dimension of 100 nm or less which molecular sieve has a crystal or agglomerate size distribution such that the variance in the longest dimension is less than 15% of the average longest dimension, and is capable of forming a colloidal suspension.

2. A molecular sieve as claimed in claim 1 in which the variance in the longest dimension is less than 10% of the average longest dimension.

3. A molecular sieve as claimed in claim 1 which is an MFI, MEL of ß-type zeolite.

4. A process for preparing a molecular sieve comprising single crystals or agglomerates according to claim 1, comprising preparing a boiling aqueous synthesis mixture comprising:

(i) a source of silica, and

(ii) an organic structure directing agent in the form of a hydroxide, in an amount sufficient to cause substantially complete dissolution of the silica source in the mixture; and crystallising the synthesis mixture at 120°C or less.

5. A process according to claim 4 in which the synthesis mixture further comprises a source of aluminum, gallium, boron, chromium, iron, vanadium, alkali metal, or alkaline earth metal.

6. A process according to claim 4 in which the synthesis mixture comprises ingredients present in amounts sufficient to produce an MFI or MEL zeolite on crystallisation of the synthesis mixture.

7. A process according to claim 4 for the production of zeolite ß in which the synthesis mixture also contains a source of aluminum.

8. A process according to claim 7 in which the silica source is added to the synthesis mixture in which the form of a solid and the synthesis mixture is subject to vigorous stirring.

9. A process according to claim 8 in which the silica source is silicic acid.

10. A process according to claim 4 in which the molar ratio of the structure directing agent to silica in the synthesis mixture is 0.2 or greater.

11. A process according to claim 4 in which the organic structure directing agent is tetramethylammonium hydroxide, tetraethylammonium hydroxide, tetrapropylammonium hydroxide or tetrabutylammonium hydroxide.

12. A process according to claim 4 in which the alkalinity of the initial synthesis mixture, expressed as a molar ratio of OH/SiO_2, is 1 or less.

13. A stable colloidal suspension containing molecular sieve related in claim 1.